

U.S. Patent Application Serial No. 10/665,204
Response to OA dated June 28, 2007

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REMARKS

Claims 17-21 and 23-25 are pending in this application of which Claims 17 and 23 have been amended. Claims 1-16 and 22 are canceled. Support for the amendments is found at least in present FIG. 2. It is respectfully submitted that no new matter is entered. It is believed that this amendment is fully responsive to the Office action mailed June 28, 2007.

Claim 17, as amended, is to a semiconductor light-receiving device for a high-speed and large-capacity optical fiber communication system. The device has a) a semi-insulating substrate, b) a semiconductor layer of a first conduction type that is formed on the semi-insulating substrate, c) a buffer layer of the first conduction type that is formed on the semiconductor layer, d) a light absorption layer that is formed on the buffer layer and generates carriers in accordance with incident light, e) a semiconductor layer of a second conduction type that is formed on the light absorption layer, and f) a high-concentration semiconductor intermediate tunneling layer of the first conduction type that is interposed between the buffer layer and the light absorption layer and has a higher impurity concentration than the buffer layer, the semiconductor intermediate tunneling layer allowing electrons to pass therethrough to the buffer layer due to a tunnel effect. The semi-insulating substrate and layers b) - f) are arranged to form a semiconductor light-receiving device, the high-concentration semiconductor intermediate tunneling layer and the buffer layer is made of an identical material. The light absorption layer directly contacts the high-concentration semiconductor intermediate tunneling layer.

U.S. Patent Application Serial No. 10/665,204
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Claims 23 and 25 are rejected under 35 U.S.C. § 102(b) as being anticipated by Watanabe (U.S. Patent No. 5,654,578). Reconsideration and removal of this rejection is respectfully requested.

It is respectfully submitted that FIG. 2 of Watanabe shows there are provided superlattice carrier multiplication layer (105) and the p-type high-concentration InP layer (106) between the light absorption layer (107) and the n-type high-concentration InP layer (104). However, Watanabe fails to teach or suggest that the light absorption layer directly contacts the tunneling layer, as now recited in Claims 17 and 23.

Accordingly, Applicants respectfully request removal of the 35 U.S.C. § 102(b) rejection.

Claims 17-21 and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Watanabe in view of Matsuoka et al. (U.S. Patent No. 5,557,117). Reconsideration and removal of this rejection is respectfully requested.

It is respectfully submitted that as noted above, Watanabe fails to teach or suggest that the light absorption layer directly contacts the tunneling layer, as recited in Claims 17 and 23, as amended. Even if combined with Matsuoka et al., Matsuoka et al. does not cure the deficiencies of Watanabe.

Accordingly, Applicants respectfully request removal of the 35 U.S.C. § 103(a) rejection.

In view of the aforementioned amendments and accompanying remarks, Claims 17-21 and 23-25, as amended, are believed to be patentable and in condition for allowance, which action, at an early date, is requested.

U.S. Patent Application Serial No. 10/665,204
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If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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